

I CLAIM:

1. A prosthesis socket direct casting device comprising:
  - a base having a forward side;
  - 5 an elongated flexible annular bladder defining an interior casting area carried by the base and extendable from the forward side thereof;
  - said bladder containing a plurality of circumferentially spaced expandable chambers extending generally along the length of the casting area;
  - 10 said chambers comprising closed interior volumes defined at least in part by inner walls extendable radially inwardly towards the a casting area;
  - said base including at least one pressurized fluid supply passage in communication with the interior volumes of said chambers;
  - said bladder having an open end opposite the end connected to the
  - 15 base;
  - said open end providing access to the casting area.
2. A prosthetic socket direct casting device as claimed in claim 1, including three circumferentially spaced expandable chambers.
- 20 3. A prosthetic socket direct casting device as claimed in claim 1, including a distention limiting structure associated with at least one wall of said bladder that limits radially outward distension thereof.
- 25 4. A prosthetic socket direct casting device as claimed in claim 1, including an additional expandable chamber located intermediate said expandable chambers and an outer wall of said bladder.

5. A method of direct pressure casting a prosthesis socket material on a residuum comprising the steps:

distributing an uncured settable prosthesis socket material on the distal end area of a residuum;

5 locating the residuum and said prosthesis socket settable material in a central casting area defined by an annular flexible bladder containing a plurality of longitudinally extending expandable chambers that expand radially inwardly of the bladder upon pressurization;

10 pressurizing the multiple chambers to cause them to expand radially inwardly toward the casting area to thereby apply pressure on the outer periphery of the prosthesis socket casting material along circumferentially separated zones.

6. The method of direct casting a prosthesis socket material as claimed  
15 in claim 5, including restraining the distal end area of the residuum relative to a base element to which one end of the bladder is secured such that reactive loads imposed on the residuum during pressurization of the chambers tending to compress the prosthesis socket material and to drive the residuum away from the base element is reacted into the base element and the distal end  
20 area of the residuum to thereby produce a tractive force against the distal end area of the residuum during pressurization and compression of the prosthesis socket material.

7. The method of direct casting a prosthesis socket material as claimed  
25 in claim 6, including using a suction socket applied to the residuum under the prosthesis socket material and an associated locking pin connected to the base element to restrain the distal end of the residuum during compression of the prosthesis socket material.